

What is claimed is:

1. An extensible markup language (XML) database duplicating apparatus for copying an XML document to a remote server without loss of structure and attribute information of the XML document, the apparatus comprising:

5 an original server for processing and transmitting only changed information of persistent classes of the XML document subject to duplication if a change of XML documents happens in an original database by a client application program; and

 at least one copied server for maintaining synchronization by applying the changed information transmitted from the original server to persistent classes of a copied database.

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2. The apparatus as claimed in claim 1, wherein the original server comprises:

 a database engine for storing the XML document in the original database and then storing information of persistent classes defined by an XML schema catalog monitor in an update log database if a change of the XML document happens;

15 an update log extractor for constructing a transmission buffer by processing the information of the persistent classes stored in the update log database; and

 a transmitter for transmitting the transmission buffer constructed by the update log extractor to the copied server.

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3. The apparatus as claimed in claim 1, wherein the copied server comprises:

 a receiver for receiving the transmission buffer transmitted from the original server; and

 an update log executor for considering the received transmission buffer as a single transaction and reflecting the transmission buffer in the copied database.

4. An extensible markup language (XML) database duplicating method for copying an XML document to a remote server without loss of structure and attribute information of the XML document in order to copy XML documents stored in the XML database having a schema-dependent storage structure of a specified server to a database of other servers physically different, the method comprising:

a first step of an original server defining an XML schema subject to replication in an original server, and defining internal tables corresponding to the schema;

a second step of the original server recording a change log if insertion, deletion and change operations of the XML document are produced by a user;

a third step of the original server constructing a transmission buffer from an update log database in order to transmit changed items to a copied server;

a fourth step of the copied server processing change operations as a single transaction in order to reflect the optimized changed items; and

a fifth step of the copied server reflecting the changed original XML document in a copied database as maintaining the structure and attribute information with respect to the changed original XML document.

5. The method as claimed in claim 4, wherein when the original server defines the XML documents subject to replication, the original server uses the XML schema that describes the structure of the XML documents as an uppermost unit of objects of replication.

6. The method as claimed in claim 4, wherein when the original server records the changed XML document in the update log, the original server constructs information of an actual physical table to be copied by using persistent classes that follow the defined XML schema.

7. The method as claimed in claim 4, wherein when the original server changes the XML document, the original server verifies whether the XML document is and XML document that follows the defined XML schema, and records the change operation of the verified XML document in the update log database.

8. The method as claimed in claim 4, wherein when the original server records a change log, the original server records only the change of the persistent classes among classes that constitute the XML document in the update log database.

9. The method as claimed in claim 4, wherein the original server constructs the transmission buffer to be transferred to the copied server, the original server extracts changed items after a finally transmitted log position, remove the logs of begin-of-transaction and end-of-transaction types from the extracted logs in order to optimize a network transmission efficiency, and constructing the transmission buffer in the order of transaction performed.

10. The method as claimed in claim 4, wherein when the copied server executes the transmitted update log, the copied server considers the transmitted update log as a single transaction irrespective of whether the transmitted update log is a result from a plurality of transactions, and reflects the transmitted update log in the copied database.